

1. (Amended) A temperature-compensated, micromechanical resonator device comprising:

a substrate;

a flexural-mode resonator having first and second ends; and

Q1 a temperature-compensating support structure anchored to the substrate to support the resonator at the first and second ends above the substrate wherein the support structure includes a first support member and a second support member for coupling the first support member to the resonator, and wherein the first support member and the resonator have different effective lengths so that the resonator has enhanced thermal stability.

Q2 4. (Amended) The device as claimed in claim 2 further comprising a sense electrode structure formed on the substrate at a position to sense output current based on motion of the resonator wherein the resonator and the sense electrode structure define a second gap therebetween.

20. (Amended) A micromechanical resonator device having a frequency versus temperature curve, the device comprising:

Q3 a substrate;

a flexural-mode resonator having first and second ends; and

a support structure anchored to the substrate to support the resonator at the first and second ends above the substrate wherein the support structure includes a first support member and a second support member for coupling the first support member to the resonator, and wherein the first support member and the resonator have different effective lengths so that the frequency versus temperature curve is specifically tailored.

23. A micromechanical resonator device comprising:

Q4 Qn-1 a substrate;

a flexural-mode resonator having first and second ends; and

a support structure anchored to the substrate to support the resonator at the first and second ends above the substrate wherein the support structure includes a first support member and a second support member for coupling the first support member to the resonator,

Q4
Cand and wherein the first support member and the resonator have different effective lengths so that the device has a substantially zero temperature coefficient temperature at which the device may be biased.

Add new claim 24 as follows:

Q5 24. (New) The device as claimed in claim 1 wherein the first and second support members of the support structure are wider than the resonator such that the support structure is non-vibratory during operation of the device.
